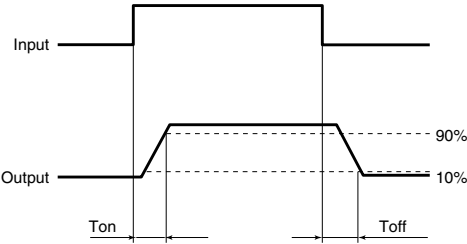


GE 1 Form A (AQV210E, AQV210EH)

2. Electrical characteristics (Ambient temperature: 25°C 77°F)

Item			Symbol	Type of connection	AQV210E(A)	AQV214E(A)	AQV210EH(A)	AQV214EH(A)	Condition
Input	LED operate current	Typical	I _{Fon}	—	1.1 mA		1.6 mA		I _L = Max.
		Maximum			3 mA				
	LED turn off current	Minimum	I _{Foff}	—	0.3 mA		0.4 mA		I _L = Max.
		Typical			1.0 mA		1.5 mA		
	LED dropout voltage	Typical	V _F	—	1.25 V (1.14 V at I _F = 5 mA)				I _F = 50 mA
		Maximum			1.5 V				
Output	On resistance	Typical	R _{On}	A	23 Ω	30 Ω	23 Ω	30 Ω	I _F = 5 mA I _L = Max. Within 1 s on time
		Maximum			35 Ω	50 Ω	35 Ω	50 Ω	
		Typical	R _{On}	B	11.5 Ω	22.5 Ω	11.5 Ω	22.5 Ω	I _F = 5 mA I _L = Max. Within 1 s on time
		Maximum			17.5 Ω	25 Ω	17.5 Ω	25 Ω	
		Typical	R _{On}	C	6.0 Ω	11.3 Ω	6.0 Ω	11.3 Ω	I _F = 5 mA I _L = Max. Within 1 s on time
		Maximum			8.8 Ω	12.5 Ω	8.8 Ω	12.5 Ω	
	Off state leakage current	Maximum	I _{Leak}	—	1 μA				I _F = 0 mA V _L = Max.
	Transfer characteristics	Turn on time*	Typical	T _{On}	—	0.5 ms		0.7 ms	
Maximum			2.0 ms						
Turn off time*		Typical	T _{Off}	—	0.05 ms				I _F = 5 mA I _L = Max.
		Maximum			1.0 ms				
I/O capacitance		Typical	C _{iso}	—	0.8 pF				f = 1 MHz V _B = 0 V
		Maximum			1.5 pF				
Initial I/O isolation resistance	Minimum	R _{iso}	—	1,000 MΩ				500 V DC	

*Turn on/Turn off time



RECOMMENDED OPERATING CONDITIONS

Please obey the following conditions to ensure proper device operation and resetting.

Item	Symbol	Recommended value	Unit
Input LED current	I _F	Standard type: 5 Reinforced type: 5 to 10	mA

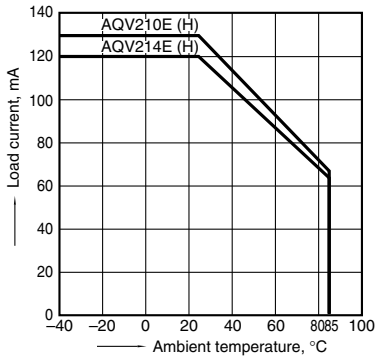
■ These products are not designed for automotive use.
If you are considering to use these products for automotive applications, please contact your local Panasonic Corporation technical representative.

REFERENCE DATA

1. Load current vs. ambient temperature characteristics

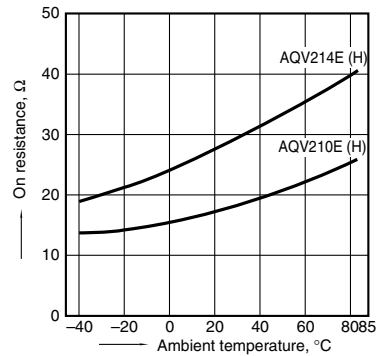
Allowable ambient temperature: -40°C to $+85^{\circ}\text{C}$
 -40°F to $+185^{\circ}\text{F}$

Type of connection: A



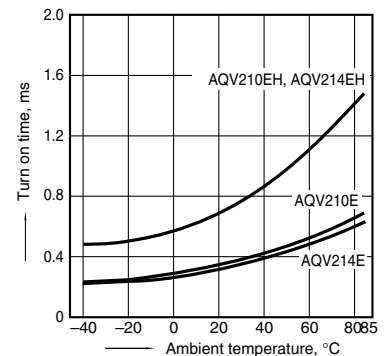
2. On-resistance vs. ambient temperature characteristics

Measured portion: between terminals 4 and 6;
 LED current: 5 mA; Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



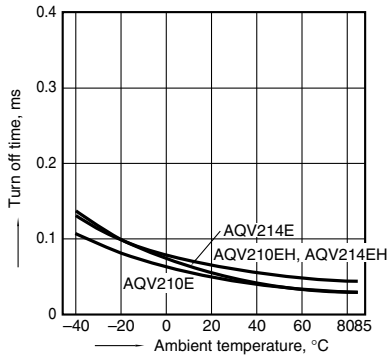
3. Turn on time vs. ambient temperature characteristics

LED current: 5 mA;
 Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



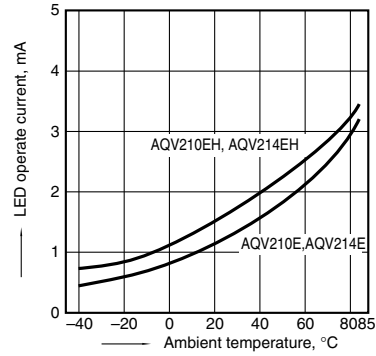
4. Turn off time vs. ambient temperature characteristics

LED current: 5 mA; Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



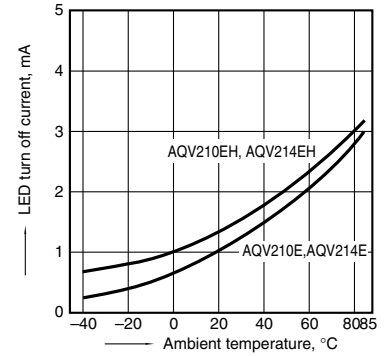
5. LED operate current vs. ambient temperature characteristics

Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



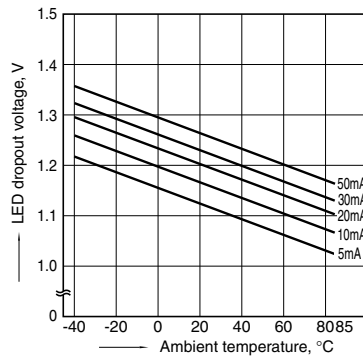
6. LED turn off current vs. ambient temperature characteristics

Load voltage: Max. (DC);
 Continuous load current: Max. (DC)



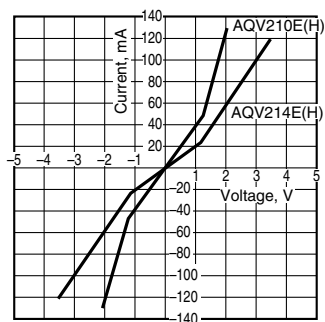
7. LED dropout voltage vs. ambient temperature characteristics

Sample: All types
 LED current: 5 to 50 mA



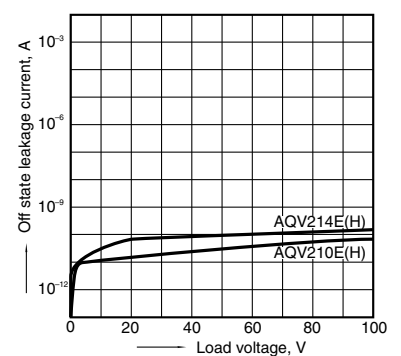
8. Current vs. voltage characteristics of output at MOS portion

Measured portion: between terminals 4 and 6;
 Ambient temperature: 25°C 77°F

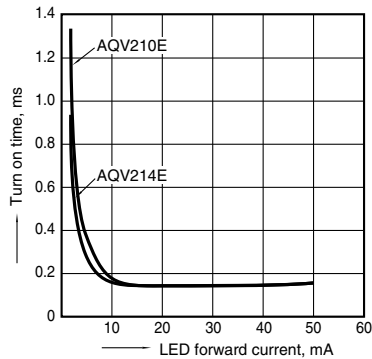


9. Off state leakage current vs. load voltage characteristics

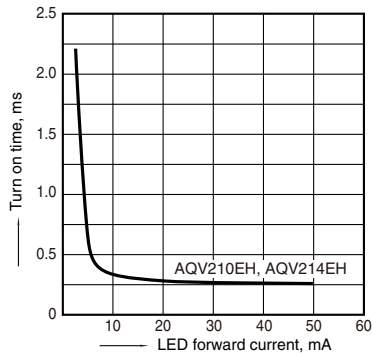
Measured portion: between terminals 4 and 6;
 Ambient temperature: 25°C 77°F



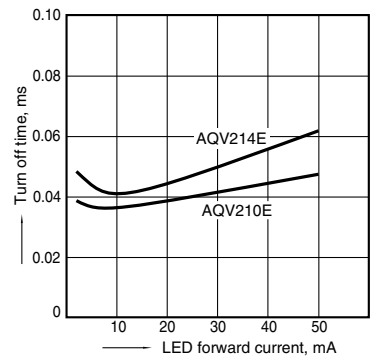
10-(1). Turn on time vs. LED forward current characteristics
Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



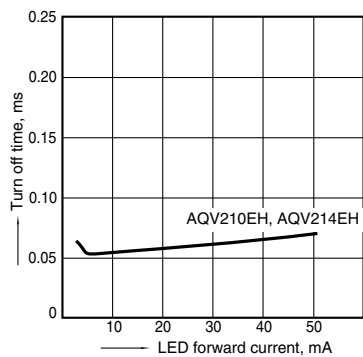
10-(2). Turn on time vs. LED forward current characteristics
Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



11-(1). Turn off time vs. LED forward current characteristics
Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



11-(2). Turn off time vs. LED forward current characteristics
Measured portion: between terminals 4 and 6;
Load voltage: Max. (DC); Continuous load current: Max. (DC); Ambient temperature: 25°C 77°F



12. Output capacitance vs. applied voltage characteristics
Measured portion: between terminals 4 and 6;
Frequency: 1 MHz;
Ambient temperature: 25°C 77°F

